

**1N2804 thru  
1N2846B  
and  
1N4557B thru  
1N4564B**

**FEATURES**

- ZENER VOLTAGE 3.9V to 200V
- AVAILABLE IN TOLERANCES OF  $\pm 5\%$ ,  $\pm 10\%$  and  $\pm 20\%$
- DESIGNED FOR MILITARY ENVIRONMENTS (See Below)

**MAXIMUM RATINGS**

Junction and Storage Temperatures:  $-65^{\circ}\text{C}$  to  $+175^{\circ}\text{C}$

DC Power Dissipation: 50 watts

Power Derating:  $0.5\text{W}/^{\circ}\text{C}$  above  $75^{\circ}\text{C}$

Forward Voltage @ 10 A: 1.5 Volts

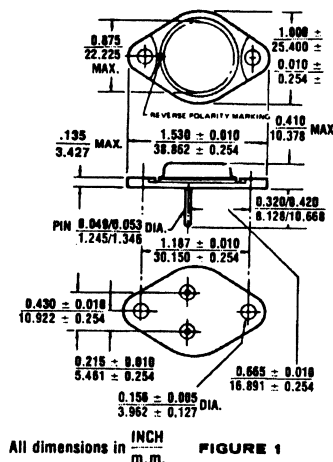
**\*ELECTRICAL CHARACTERISTICS @  $25^{\circ}\text{C}$**

| JEDEC<br>TYPE NO.<br>(Note 1) | NOMINAL<br>ZENER<br>VOLTAGE<br>$V_z$ @ $I_z$<br>(Note 2) | ZENER<br>TEST<br>CURRENT<br>$I_z$ mA | MAX. ZENER IMPEDANCE<br>(Note 3) |                              | MAX. DC<br>ZENER<br>CURRENT<br>$I_{ZM}$ @ $75^{\circ}\text{C}$<br>Case Temp. (Note 4) | TYPICAL<br>ZENER<br>VOLTAGE<br>Temp. Coeff.<br>$\alpha_{Vz}$<br>%/°C | MAXIMUM LEAKAGE<br>CURRENT ** |       |
|-------------------------------|----------------------------------------------------------|--------------------------------------|----------------------------------|------------------------------|---------------------------------------------------------------------------------------|----------------------------------------------------------------------|-------------------------------|-------|
|                               |                                                          |                                      | $Z_z$ @ $I_z$<br>OHMS            | $5\text{ mA } (I_z)$<br>OHMS |                                                                                       |                                                                      | $\mu\text{A}$                 | $V_R$ |
| †1N4557B                      | 3.9                                                      | 3200                                 | 0.16                             | 400                          | 11,900                                                                                | -0.046                                                               | 150                           | 0.5   |
| †1N4558B                      | 4.3                                                      | 2900                                 | 0.16                             | 500                          | 10,650                                                                                | -0.033                                                               | 150                           | 0.5   |
| †1N4559B                      | 4.7                                                      | 2650                                 | 0.12                             | 600                          | 9,700                                                                                 | -0.015                                                               | 100                           | 1     |
| †1N4560B                      | 5.1                                                      | 2450                                 | 0.12                             | 650                          | 8,900                                                                                 | $\pm 0.010$                                                          | 20                            | 1     |
| †1N4561B                      | 5.6                                                      | 2250                                 | 0.12                             | 900                          | 8,100                                                                                 | +0.03                                                                | 20                            | 1     |
| †1N4562B                      | 6.2                                                      | 2000                                 | 0.14                             | 1000                         | 7,300                                                                                 | +0.049                                                               | 20                            | 2     |
| 1N4563B                       | 6.8                                                      | 1850                                 | 0.16                             | 200                          | 6,650                                                                                 | +0.053                                                               | 10                            | 2     |
| 1N4564B                       | 7.5                                                      | 1650                                 | 0.24                             | 100                          | 6,050                                                                                 | +0.057                                                               | 10                            | 3     |
| †1N2804B                      | 6.8                                                      | 1850                                 | 0.2                              | 70                           | 7,400                                                                                 | .040                                                                 | 150                           | 4.5   |
| †1N2805B                      | 7.5                                                      | 1700                                 | 0.3                              | 70                           | 6,600                                                                                 | .045                                                                 | 100                           | 5     |
| †1N2806B                      | 8.2                                                      | 1500                                 | 0.4                              | 70                           | 5,800                                                                                 | .048                                                                 | 50                            | 5.4   |
| †1N2807B                      | 9.1                                                      | 1370                                 | 0.5                              | 70                           | 5,300                                                                                 | .050                                                                 | 25                            | 6.1   |
| †1N2808B                      | 10                                                       | 1200                                 | 0.6                              | 80                           | 4,800                                                                                 | .055                                                                 | 25                            | 6.7   |
| †1N2809B                      | 11                                                       | 1100                                 | 0.8                              | 80                           | 4,300                                                                                 | .060                                                                 | 10                            | 8.4   |
| †1N2810B                      | 12                                                       | 1000                                 | 1.0                              | 80                           | 4,000                                                                                 | .065                                                                 | 10                            | 9.1   |
| †1N2811B                      | 13                                                       | 960                                  | 1.1                              | 80                           | 3,700                                                                                 | .065                                                                 | 10                            | 9.9   |
| 1N2812B                       | 14                                                       | 890                                  | 1.2                              | 80                           | 3,400                                                                                 | .070                                                                 | 10                            | 10.6  |
| †1N2813B                      | 15                                                       | 830                                  | 1.4                              | 80                           | 3,100                                                                                 | .070                                                                 | 10                            | 11.4  |
| †1N2814B                      | 16                                                       | 780                                  | 1.6                              | 80                           | 2,950                                                                                 | .070                                                                 | 10                            | 12.2  |
| 1N2815B                       | 17                                                       | 740                                  | 1.8                              | 80                           | 2,750                                                                                 | .075                                                                 | 10                            | 13.0  |
| †1N2816B                      | 18                                                       | 700                                  | 2.0                              | 80                           | 2,550                                                                                 | .075                                                                 | 10                            | 13.7  |
| 1N2817B                       | 19                                                       | 660                                  | 2.2                              | 80                           | 2,450                                                                                 | .075                                                                 | 10                            | 14.4  |
| †1N2818B                      | 20                                                       | 630                                  | 2.4                              | 80                           | 2,350                                                                                 | .075                                                                 | 10                            | 15.2  |
| †1N2819B                      | 22                                                       | 570                                  | 2.5                              | 80                           | 2,100                                                                                 | .080                                                                 | 10                            | 16.7  |
| †1N2820B                      | 24                                                       | 520                                  | 2.6                              | 80                           | 1,950                                                                                 | .080                                                                 | 10                            | 18.2  |
| 1N2821B                       | 25                                                       | 500                                  | 2.7                              | 90                           | 1,850                                                                                 | .080                                                                 | 10                            | 19    |
| †1N2822B                      | 27                                                       | 460                                  | 2.8                              | 90                           | 1,650                                                                                 | .085                                                                 | 10                            | 20.6  |
| †1N2823B                      | 30                                                       | 420                                  | 3.0                              | 90                           | 1,550                                                                                 | .085                                                                 | 10                            | 22.8  |
| †1N2824B                      | 33                                                       | 380                                  | 3.2                              | 90                           | 1,450                                                                                 | .085                                                                 | 10                            | 25.1  |
| †1N2825B                      | 36                                                       | 350                                  | 3.5                              | 90                           | 1,300                                                                                 | .085                                                                 | 10                            | 27.4  |
| †1N2826B                      | 39                                                       | 320                                  | 4.0                              | 90                           | 1,175                                                                                 | .090                                                                 | 10                            | 29.7  |
| †1N2827B                      | 43                                                       | 290                                  | 4.5                              | 90                           | 1,075                                                                                 | .090                                                                 | 10                            | 32.7  |
| 1N2828B                       | 45                                                       | 280                                  | 4.5                              | 100                          | 1,030                                                                                 | .090                                                                 | 10                            | 34.2  |
| †1N2829B                      | 47                                                       | 270                                  | 5.0                              | 100                          | 980                                                                                   | .090                                                                 | 10                            | 35.8  |
| 1N2830B                       | 50                                                       | 250                                  | 5.0                              | 100                          | 935                                                                                   | .090                                                                 | 10                            | 38    |
| †1N2831B                      | 51                                                       | 245                                  | 5.2                              | 100                          | 925                                                                                   | .090                                                                 | 10                            | 38.8  |
| †1N2832B                      | 56                                                       | 220                                  | 6                                | 110                          | 825                                                                                   | .090                                                                 | 10                            | 42.6  |
| †1N2833B                      | 62                                                       | 200                                  | 7                                | 120                          | 735                                                                                   | .090                                                                 | 10                            | 47.1  |
| †1N2834B                      | 68                                                       | 180                                  | 8                                | 140                          | 670                                                                                   | .090                                                                 | 10                            | 51.7  |
| †1N2835B                      | 75                                                       | 170                                  | 9                                | 150                          | 600                                                                                   | .090                                                                 | 10                            | 56    |
| †1N2836B                      | 82                                                       | 150                                  | 11                               | 160                          | 550                                                                                   | .090                                                                 | 10                            | 62.2  |
| †1N2837B                      | 91                                                       | 140                                  | 15                               | 180                          | 470                                                                                   | .090                                                                 | 10                            | 69.2  |
| †1N2838B                      | 100                                                      | 120                                  | 20                               | 200                          | 450                                                                                   | .090                                                                 | 10                            | 76    |
| 1N2839B                       | 105                                                      | 120                                  | 25                               | 210                          | 430                                                                                   | .095                                                                 | 10                            | 79.8  |
| †1N2840B                      | 110                                                      | 110                                  | 30                               | 220                          | 410                                                                                   | .095                                                                 | 10                            | 83.6  |
| †1N2841B                      | 120                                                      | 100                                  | 40                               | 240                          | 375                                                                                   | .095                                                                 | 10                            | 91.2  |
| †1N2842B                      | 130                                                      | 95                                   | 50                               | 275                          | 345                                                                                   | .095                                                                 | 10                            | 98.8  |
| †1N2843B                      | 150                                                      | 85                                   | 75                               | 400                          | 300                                                                                   | .095                                                                 | 10                            | 114.0 |
| †1N2844B                      | 180                                                      | 80                                   | 80                               | 450                          | 285                                                                                   | .095                                                                 | 10                            | 121.6 |
| †1N2845B                      | 180                                                      | 68                                   | 90                               | 525                          | 250                                                                                   | .095                                                                 | 10                            | 136.0 |
| †1N2846B                      | 200                                                      | 65                                   | 100                              | 600                          | 220                                                                                   | .100                                                                 | 10                            | 152.0 |

\*JEDEC Registered Data. \*\*Not JEDEC Data.

† Have JAN, JANTX and JANTXV Qualifications to MIL-S-19500/114.

**SILICON  
50 WATT  
ZENER DIODES**



All dimensions in INCH m.m. **FIGURE 1**

**MECHANICAL  
CHARACTERISTICS**

CASE: Industry Standard TO-3, (modified), hermetically sealed, 0.052 inch diameter pins.

FINISH: All external surfaces are corrosion resistant and terminal solderable.

THERMAL RESISTANCE:  $1.5^{\circ}\text{C}/\text{W}$  (Typical) junction to base.

POLARITY: Standard Polarity units are connected anode to case. Reverse polarity (cathode to case is indicated by a red dot on the base plate. (Suffix R)

WEIGHT: 15 grams.

MOUNTING HARDWARE: See page 2-9.